DETAILED ACTION

Response to Amendment

1. The amendment filed on 11 December 2008 was accepted and entered. Accordingly, claims 3-4, 8, 16, 18, and 22 have been amended. No new claims have been added. Claims 1-2, 10, and 15 have been cancelled. Thus, claims 3-9, 11-14, and 16-22 are currently pending in this application.

2. In view of the remarks and amendment, received 11 December 2008, the previous objections to claims 16 and 22 have been withdrawn.

Response to Arguments

3. Applicant's arguments filed 11 December 2008 have been fully considered but they are not persuasive.

4. In response to applicant's argument pertaining to the purpose of the mounting and alignment means, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

5. In regards to claim 11-12 and 21 Applicant argues that Lingren, Anderton, or Appleby, nor the combination, teach aligning and mounting a collimator mounting frame

to a circuit board by a second set of alignment pins so that collimator mounting frame is aligned with the array of detector elements. It is interpreted that Applicant means to say that the above mentioned references neither alone nor in combination teach the above. The Examiner respectfully disagrees.

Lingren further teaches a means for mounting a collimator to the circuit board in alignment with the circuit board ([0027] lines 3-4; Fig. 2). Lingren, also, teaches including a frame as a housing ([0033] lines 1-2) and an aligning means for aligning the frame and the circuit board ([0033] lines 1-2) and the collimator is mounted in a fixed alignment (Fig. 2). if it is held that Lingren does not teach the housing to surround the collimator (or the mounting means includes a frame) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

Lingren does not explicitly teach the frame (or housing) to be a collimator mounting frame, which frame mounts the collimator in fixed alignment.

However, it is known in the art, to include a mounting frame around the collimator for the benefit of increasing support and control in aligning the collimator, as shown in paragraph [0042] of Anderton.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a mounting frame, as known in the art and taught by Anderton, frame mounting the collimator, taught by Lingren, for the benefit of increasing support and control in aligning the collimator.

Lingren does not teach using a second set of rigid alignment pins as the means for mounting a collimator to the circuit board in alignment with the circuit board. Appleby teaches using pins to align a collimator [0372]. Also, it is known in the alignment art to use rigid pins to align different objects to each other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a second set of rigid pins (as is known in the art and taught by Appleby) as the means for mounting a collimator to the circuit board in alignment with the circuit board, as taught by Lingren, as a person of ordinary skill has good reason to pursue the known options within his/her technical grasp.

6. In regards to claims 13-14 and 16-17 Applicant argues that Orava or Lingren, nor the combination, teach a frame that includes alignment holes and a collimator have alignment pins for mounting the collimator in precise alignment with the frame and thereby aligning the collimator with the substrate, hence the detector elements that are also aligned with the substrate (emphasis added). The section of this argument that has been bolded above is unclear. The limitations, which this argument refers to is " a frame that includes alignment holes of the second cross section, which align with the frame alignment holes in the substrate, and alignment holes of a third cross-section; a collimator having rigid alignment pins of the third cross section for mounting the collimator in precise alignment with the frame, transitively aligning the collimator with the substrate and the detector modules." It is interpreted that Applicant means to that the

above mentioned references neither alone nor in combination teach the above. The Examiner respectfully disagrees.

If it is held that Orava does not include a frame or alignment holes attaching the frame to the substrate. Lingren teaches the substrate defines a plurality of substrate alignment holes and further including: a frame which defines alignment holes, which align with the substrate alignment holes for the benefit of preventing stray radiation from affecting the acquired image ([0032] line 3; [0033] lines 1-2). Also, it is known in the art to use holes to align two objects together. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a frame aligned to substrate including alignment holes of the frame and substrate, for the benefit of preventing stray radiation from affecting the acquired image and as a person with ordinary skill has good reason to pursue the known options within his/her technical grasp.

Orava does not explicitly teach a collimator having rigid alignment pins for mounting collimator in precise alignment with the frame, which has alignment holes, transitively aligning the collimator with the substrate and detector modules. Lingren teaches using an aligned collimator with respect of a frame and detector elements for the benefit of increasing resolution ([0027] line 4; Fig. 2). Therefore it would have been obvious to one of ordinary skill at the time of the invention to include a collimator, as taught by Lingren, in the invention taught by Orava, for the benefit of increasing resolution.

If it is held that Lingren, as modified above, does not teach the housing to surround the collimator (or the frame includes a collimator mounting means) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

It is known in the alignment art to use rigid pins and holes as the means of alignment between two objects. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made use rigid pins and holes as the alignment means between the collimator and frame, as a person with ordinary skill has good reason to pursue the known options within his/her technical grasp.

7. In regards to claim 22 Applicant argues that Lingren, Anderton, or Appleby, nor in combination, teach aligning and mounting a collimator mounting frame to a circuit board by a second set of alignment pins so that collimator mounting frame is aligned with the array of detectors. It is interpreted that Applicant means to that the above mentioned references neither alone nor in combination teach the above. The Examiner respectfully disagrees.

Lingren further teaches a means for mounting a collimator to the circuit board in alignment with the circuit board ([0027] lines 3-4; Fig. 2). Lingren, also, teaches including a frame as a housing ([0033] lines 1-2) and an aligning means for aligning the frame and the circuit board ([0033] lines 1-2) and the collimator is mounted in a fixed alignment (Fig. 2). if it is held that Lingren does not teach the housing to surround the

collimator (or the mounting means includes a frame) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

Lingren does not explicitly teach the frame (or housing) to be a collimator mounting frame, which frame mounts the collimator in fixed alignment.

However, it is known in the art, to include a mounting frame around the collimator for the benefit of increasing support and control in aligning the collimator, as shown in paragraph [0042] of Anderton.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a mounting frame, as known in the art and taught by Anderton, frame mounting the collimator, taught by Lingren, for the benefit of increasing support and control in aligning the collimator.

Lingren does not teach using a second set of rigid alignment pins as the means for mounting a collimator to the circuit board in alignment with the circuit board. Appleby teaches using pins to align a collimator [0372]. Also, it is known in the alignment art to use rigid pins to align different objects to each other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a second set of rigid pins (as is known in the art and taught by Appleby) as the means for mounting a collimator to the circuit board in alignment with the circuit board, as taught by Lingren, as a person of ordinary skill has good reason to pursue the known options within his/her technical grasp.

8. Applicant's arguments with respect to claims 18-20 have been considered but are moot in view of the new ground(s) of rejection. Claim 18 has been amended, which necessitates a new grounds of rejection.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 4-6 are rejected under 35 U.S.C. 102(b) as anticipated by Lingren et al. (EP 1249713), hereinafter referred to as Lingren or, in the alternative, under 35 U.S.C. 103(a) as obvious.

11. With respect to claim 4, Lingren teaches a detector for a nuclear imaging system ([0029] lines 3-4), the detector comprising:

a plurality of platforms (214; [0030] lines 1-2, Each module 206 includes a carrier 214 as seen in Fig. 3a.) which each support an array of individual detector elements (Fig. 3a), each platform including:

a plurality of electrical connectors ([0037] lines 1-2; [0041] lines 2-3), and

a platform alignment structure that includes rigid pins for aligning the platforms supporting the detector elements ([0041] lines 2-4; [0048] lines 2-3; [0051] lines 1-2) with a circuit board (208) that receives the platforms ([0030] lines 1-3),

which circuit board includes:

a plurality of electrical connection means that electrically connect with the electrical connectors ([0029] lines 5-6; [0037] lines 1-2; [0041] lines 2-4), and

a mating circuit board alignment structure that includes apertures of like-cross-section with the platform alignment structure rigid pins that mate with the platform alignment structure rigid pins to align the platform and the individual detector elements to the circuit board ([0041] lines 2-4; [0048] lines 2-3; [0051] lines 1-2); and

a means for mounting a collimator to the circuit board in alignment with the circuit board ([0027] lines 3-4; Fig. 2).

12. Lingren further teaches, the collimator mounting means includes a frame ([0033] lines 1-2) and further including: an aligning means for aligning the frame and the circuit board ([0033] lines 1-2) and the collimator is mounted in a fixed alignment (Fig. 2). In the alternative, if it is held that Lingren does not teach the housing to surround the collimator (or the mounting means includes a frame) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator

on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

13. With respect to claim 5, Lingren teaches the individual detector elements are separated by interfaces or gaps (lines of separation 216; Fig. 3a) and wherein the collimator includes mechanical elements which define a plurality of apertures ([0027] line 4; collimators include a plurality of apertures, especially when an imaging device having a plurality of pixels is receiving the energy that is passing through the apertures), the mechanical elements being aligned with the interfaces or gaps such that the apertures are centered on and aligned with the individual detector elements (inherently, the collimator apertures and pixel centers are aligned providing the system with improved resolution). In the alternative, if it is held that Lingren does not inherently teach the collimator having a plurality of apertures or the apertures of the collimator being aligned with the center of the pixels; It would have been obvious to one of ordinary skill at the time of the invention to include a plurality of apertures in the collimator for the benefit of broadening the area being imaged at any given time. Also, It would have been obvious to one of ordinary skill at the time of the invention to align the apertures of the collimator with the center of the pixels for the benefit of increasing the resolution of the system.

14. With respect to claim 6, Lingren further teaches the aligning means includes: at least two alignment holes defined in the frame, and at least two matching holes defined in the circuit board ([0033] lines 1-2).

15. With respect to claim 8, Lingren teaches the platform alignment structures include rigid pins positioned diagonally from each other (Fig. 3a).

16. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lingren et al. (EP 1249713), hereinafter referred to as Lingren, as applied to claim 4 above, and further in view of Orava et al. (US 5,955,733), hereinafter referred to as Orava.

17. With respect to claim 3, Lingren teaches all of the limitations of claim 4, as explained above. Lingren further teaches pins having separate functions ([0049] lines 1-2; [0051]; [0052]; Tables 1-2). If it is held that Lingren does not teach any of the pins are not used for transmitting electrical signals between the platforms and the circuit board; Then, Orava teaches the use of pins that are solely used for alignment purposes and are not used for transmitting electrical signals between the platform and the circuit board (col. 5, lines 41-51), for the benefit of increasing stability. Therefore, It would have been obvious to one of ordinary skill at the time of the invention to have some of the pins taught by Lingren be used solely for alignment purposes and not used for

transmitting electrical signals between the platforms and the circuit for the benefit of increasing stability.

18. With respect to claim 9, Lingren teaches the connectors are pins of relatively soft metal that tend to deform as the platform are received on the circuit board (soldered [0049] lines 1-2).

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lingren et al. (EP 1249713), hereinafter referred to as Lingren, as applied to claims 4 and 6 above, and further in view of Chu et al. (US 2004/0080952), hereinafter referred to as Chu.

20. With respect to claim 7, Lingren teaches all of the limitations of claims 4-6 or in the alternative all of the limitations of claims 4-6 are taught or made obvious, as explained above. Lingren further teaches the detection modules arranged in a rectangular array ([0048] lines 4-5 and 11).

Lingren does not explicitly teach the frame has a rectangular face including: a longer dimension, and a shorter dimension, the at least two frame alignment holes being disposed along the shorter dimension to reduce an effect of thermal dilatation.

However, it would have been obvious to one of ordinary skill at the time of the invention to have the housing, or frame, have similar dimensions to the array of detection modules for the benefit of decreasing wasted space and making the system more compact.

Chu teaches having two alignment structures of a frame disposed along the shorter dimension for the benefit of decreasing the difficulty in disassembling the frame ([0007] lines7-8; [0009] lines 6, 9, and 15-16). Therefore, it would have been obvious to one of ordinary skill at the time of the invention to have the at least two frame alignment holes disposed along the shorter dimension in the invention of Lingren for the benefit of decreasing the difficulty in disassembling the frame.

21. Claims 11-12 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lingren and in view of Anderton, R. Larry (US 2003/0095627), hereinafter referred to as Anderton, and Appleby et al. (US 2003/0235272), hereinafter referred to as Appleby.

22. With respect to claims 11 and 22, Lingren teaches a method of assembling a detector for a nuclear imaging system and a detector assembly ([0029] lines 3-4) comprising:

inserting each of a plurality of platforms (214; [0030] lines 1-2, Each module 206 includes a carrier 214 as seen in Fig. 3a.), which each include an array of individual detector elements (Fig. 3a), a plurality of electrical connectors ([0037] lines 1-2; [0041] lines 2-3), and a first set of rigid alignment pins ([0041] lines 2-4) into a circuit board (208; [0030] lines 1-3) which includes a plurality of electrical connections which electrically connect with the electrical connectors as the platforms are inserted ([0029] lines 5-6; [0037]

lines 1-2; [0041] lines 2-4), and circuit board alignment structures, which mate with the first set of rigid alignment pins as the platform is inserted to align the arrays of detector elements with the circuit board and each other ([0041] lines 2-4);

Lingren further teaches a means for mounting a collimator to the circuit board in alignment with the circuit board ([0027] lines 3-4; Fig. 2). Lingren, also, teaches including a frame as a housing ([0033] lines 1-2) and an aligning means for aligning the frame and the circuit board ([0033] lines 1-2) and the collimator is mounted in a fixed alignment (Fig. 2). if it is held that Lingren does not teach the housing to surround the collimator (or the mounting means includes a frame) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

Lingren does not explicitly teach the frame (or housing) to be a collimator mounting frame, which frame mounts the collimator in fixed alignment.

However, it is known in the art, to include a mounting frame around the collimator for the benefit of increasing support and control in aligning the collimator, as shown in paragraph [0042] of Anderton.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a mounting frame, as known in the art and taught by Anderton, frame mounting the collimator, taught by Lingren, for the benefit of increasing support and control in aligning the collimator.

Lingren does not teach using a second set of rigid alignment pins as the means for mounting a collimator to the circuit board in alignment with the circuit board. Appleby teaches using pins to align a collimator [0372]. Also, it is known in the alignment art to use rigid pins to align different objects to each other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a second set of rigid pins (as is known in the art and taught by Appleby) as the means for mounting a collimator to the circuit board in alignment with the circuit board, as taught by Lingren, as a person of ordinary skill has good reason to pursue the known options within his/her technical grasp.

23. With respect to claim 12, Lingren teaches the individual detector elements are separated by interfaces or gaps (lines of separation 216; Fig. 3a) and wherein the collimator includes mechanical elements which define a plurality of apertures ([0027] line 4; collimators include a plurality of apertures, especially when an imaging device having a plurality of pixels is receiving the energy that is passing through the apertures), the mechanical elements being aligned with the interfaces or gaps such that the apertures are centered on and aligned with the individual detector elements (inherently, the collimator apertures and pixel centers are aligned providing the system with improved resolution). If it is held that Lingren does not inherently teach the collimator having a plurality of apertures or the apertures of the collimator being aligned with the center of the pixels; It would have been obvious to one of ordinary skill at the time of the invention to include a plurality of apertures in the collimator for the benefit of broadening

the area being imaged at any given time. Also, it would have been obvious to one of ordinary skill at the time of the invention to align the apertures of the collimator with the center of the pixels for the benefit of increasing the resolution of the system.

24. With respect to claim 21, Anderton is silent on how the frame is secured to the collimator. However, it is very well known in the art to secure something into a frame using alignment pins corresponding to alignment holes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the collimator in the frame, as taught by Anderton, including inserting collimator alignment pins into corresponding alignment holes in the frame, as is known in the art, as a person with ordinary skill has good reason to pursue the known options within his/her technical grasp.

25. Claims 13-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orava et al. (US 5,955,733), hereinafter referred to as Orava, and further in view of Lingren et al. (EP 1249713), hereinafter referred to as Lingren.

26. With respect to Claim 13, Orava teaches a detector for a nuclear imaging system (col. 1, lines 9-10 and 16-17), the detector comprising:

a substrate including a plurality of sets of electrically conductive holes (col. 5, lines 19-23) and alignment holes of a first cross section (col. 5, lines 40-42); and

a plurality of detector modules (col. 4, lines 28-32) each detector module including a plurality of electrically conductive connection pins (col. 5, lines 16-23 and 46-47; col. 6, lines 65-67) and rigid alignment pins of the first cross section (col. 5, lines 40-43), each set of alignment holes 5b being configured to receive the alignment pins 5a of one of the modules (col. 5, lines 16-23 and 40-43), the electrically conductive pins being softer than the alignment pins and easier to bend than the alignment pins, such that the alignment pins maintain the detector modules in alignment with each other and the circuit board even when the electrically conductive connection pins bend during receipt into the electric connection pin receiving holes (col. 5, lines 16-23 and 40-47; col. 6, lines 65-67).

In the alternative, if it is held that Orava does not inherently teach the electrically conductive connection pins to be softer than the alignment pins and easier to bend than the alignment pins. Orava teaches using a flexible material for the benefit of ensuring that the air pressure differential between the upper and lower surfaces of the device is maintained (col. 5, lines 36-40). Therefore It would have been obvious to one of ordinary skill at the time of the invention to have the electrically conductive connection pins made of a material that is sufficiently soft that tends to bend for the benefit of ensuring that the air pressure differential between the upper and lower surfaces of the device is maintained.

If it is held that Orava does not include a frame or alignment holes attaching the frame to the substrate. Lingren teaches the substrate defines a plurality of substrate

alignment holes and further including: a frame which defines alignment holes, which align with the substrate alignment holes for the benefit of preventing stray radiation from affecting the acquired image ([0032] line 3; [0033] lines 1-2). Also, it is known in the art to use holes to align two objects together. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a frame aligned to substrate including alignment holes of the frame and substrate, for the benefit of preventing stray radiation from affecting the acquired image and as a person with ordinary skill has good reason to pursue the known options within his/her technical grasp.

Orava does not explicitly teach a collimator having rigid alignment pins for mounting collimator in precise alignment with the frame, which has alignment holes, transitively aligning the collimator with the substrate and detector modules. Lingren teaches using an aligned collimator with respect of a frame and detector elements for the benefit of increasing resolution ([0027] line 4; Fig. 2). Therefore it would have been obvious to one of ordinary skill at the time of the invention to include a collimator, as taught by Lingren, in the invention taught by Orava, for the benefit of increasing resolution.

If it is held that Lingren, as modified above, does not teach the housing to surround the collimator (or the frame includes a collimator mounting means) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

It is known in the alignment art to use rigid pins and holes as the means of alignment between two objects. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made use rigid pins and holes as the alignment means between the collimator and frame, as a person with ordinary skill has good reason to pursue the known options within his/her technical grasp.

27. With respect to claim 14, Orava further teaches each detector module includes: individual detector elements which are electrically connected to the electrically conductive connector pins, the individual detector elements being mounted in a rectangular array separated from each other by a rectangular grid of interfaces (col. 4, lines 55-61; col. 5, lines 15-23; Orava teaches that in a preferred embodiment Active Semiconductor Imaging Devices as described in PCT/EP95/02056 are used. As seen in Fig. 5 of PCT/EP95/02056 the individual detector elements are configured in a rectangular array including rectangular grid interfaces.).

28. With respect to claim 17, Orava does not teach the collimator including: radiation blocking element that form a rectangular grid which overlays the interface grids of the individual detector elements which are mounted to the substrate when the collimator is mounted in and aligned with the frame that is aligned with the substrate.

If it is held that Lingren does not inherently teach the collimator having a plurality of elements or the apertures of the collimator being aligned with the center of the pixels; It would have been obvious to one of ordinary skill at the time of the invention to include

a plurality of apertures in the collimator for the benefit of broadening the area being imaged at any given time. Also, It would have been obvious to one of ordinary skill at the time of the invention to align the apertures of the collimator with the center of the pixels for the benefit of increasing the resolution of the system.

29. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orava et al. (US 5,955,733), hereinafter referred to as Orava, in view of Lingren et al. (EP 1249713), hereinafter referred to as Lingren, as applied to claim 13 above, and further in view of Chu et al. (US 2004/0080952), hereinafter referred to as Chu.

Orava further teaches the substrate to be in a rectangular configuration (Fig. 3).

Orava does not explicitly teach the frame has a rectangular face which includes: a longer dimension, and a shorter dimension; and the alignment holes including two alignment holes defined in the shorter dimension and two alignment holes in the longer dimension, the two holes of only one of the longer and shorter dimensions being used to reduce an effect of thermal dilatation.

However, it would have been obvious to one of ordinary skill at the time of the invention to have the housing, or frame, have similar dimensions to the array of detection modules for the benefit of decreasing wasted space and making the system more compact.

Chu teaches having two alignment structures of a frame disposed along the shorter dimension for the benefit of decreasing the difficulty in disassembling the frame ([0007] lines7-8; [0009] lines 6, 9, and 15-16). Therefore, it would have been obvious to

one of ordinary skill at the time of the invention to have the at least two frame alignment holes disposed along the shorter dimension in the invention of Lingren for the benefit of decreasing the difficulty in disassembling the frame.

One of ordinary skill in the art would recognize that Chu teaches using an alignment structure along only one direction of a frame would decrease difficulty in disassembling the frame, because the frame would then be fastened in fewer places. Orava, as modified above, does not explicitly teach having a second set of alignment holes and these holes being located in the longer dimension. It would have been obvious to one of ordinary skill in the art to have two alignment holes in the longer dimension, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art and since it has been held that rearranging parts of an invention involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 549 f.2d 833, 193 USPQ 8 (1976). Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

30. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lingren et al. (EP 1249713), hereinafter referred to as Lingren, in view of Orava et al. (US 5,955,733), hereinafter referred to as Orava, and Anderton, R. Larry (US 2003/0095627), hereinafter referred to as Anderton.

31. With respect to claim 18, Lingren teaches a detector for a nuclear imaging system ([0029] lines 3-4), the detector comprising:

a plurality of detector elements (detector elements 212) selectively securable to a circuit board ([0049] lines 4-6), the detector elements being separated by gaps (lines of separation 216), the detector elements having electrical contacts for connecting electrically with the circuit board ([0037] lines 1-2; [0041] lines 2-3; [0029] lines 5-6; [0037] lines 1-2; [0041] lines 2-4);

rigid pins that align the detector elements on the circuit board, the rigid pins being different from the electrical contacts (Figs. 2 and 3a; [0041]);

a collimator comprising mechanical elements which define a plurality of apertures ([0027] line 4); and

a collimator alignment mechanism, said collimator alignment mechanism aligning the mechanical elements with the gaps separating the detector elements such that the apertures are aligned with the detector elements (Fig. 2).

In the alternative, if it is held that Lingren does not inherently teach the collimator having a plurality of apertures or the apertures of the collimator being aligned with the center of the pixels; It would have been obvious to one of ordinary skill at the time of the invention to include a plurality of apertures in the collimator for the benefit of broadening the area being imaged at any given time. Also, It would have been obvious to one of ordinary skill at the time of the invention to align the apertures of the collimator with the center of the pixels for the benefit of increasing the resolution of the system.

If it is held that Lingren does not teach the rigid pins being different from the electrical contacts; then, Orava teaches the use of pins that are solely used for alignment purposes and are not used for transmitting electrical signals between the

platform and the circuit board(col. 5, lines 41-51), for the benefit of increasing stability. Orava teaches that these pins are different than the electrical contacts (Fig. 1c). Therefore, It would have been obvious to one of ordinary skill at the time of the invention to have some of the pins taught by Lingren be used solely for alignment purposes and be different from the electrical contacts and not used for transmitting electrical signals between the platforms and the circuit for the benefit of increasing stability.

Lingren further teaches the collimator alignment mechanism uses a frame ([0033] lines 1-2) to align the mechanical elements with the circuit board with which circuit board the detector elements have been aligned, such that the collimator apertures and the detector elements are aligned ([0033] lines 1-2; Fig. 2) and the collimator is mounted in a fixed alignment (Fig. 2).

In the alternative, if it is held that Lingren does not teach the housing to surround the collimator (or the mounting means includes a frame) it would have been obvious to one of ordinary skill at the time of the invention to have the housing surround the collimator on the sides for the benefit of preventing stray radiation from adversely affecting the acquired image ([0032] line 3).

If it is held that Lingren does not explicitly teach that the frame is used to align the collimator with the circuit board; then, it is known in the art, to include a mounting frame around the collimator for the benefit of increasing support and control in aligning the collimator, as shown in paragraph [0042] of Anderton.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a mounting frame, as known in the art and taught by Anderton, frame mounting the collimator, taught by Lingren, for the benefit of increasing support and control in aligning the collimator.

32. With respect to claim 19, Lingren further teaches a detector element alignment mechanism, said detector element alignment mechanism aligning the detector elements on the circuit board ([0041] lines 2-4).

33. With respect to claim 20, Lingren teaches each aperture is aligned with an individual detector element ([0027] line 4). In the alternative, if it is held that Lingren does not inherently teach each aperture is aligned with an individual detector element; it is well known in the art to have each aperture of a collimator correspond and be position with individual detector elements, for the benefit of increasing resolution. Therefore, it would have been obvious to one of ordinary skill at the time of the invention to have each aperture of the collimator taught by Lingren to be aligned with an individual detector element for the benefit of increasing resolution.

Conclusion

34. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAROLYN IGYARTO whose telephone number is (571)270-1286. The examiner can normally be reached on Monday - Thursday, 7:30 A.M. to 5 P.M. E.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Porta/
Supervisory Patent Examiner, Art Unit 2884

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